



IFW

Docket No.: 31978-235608  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Sergei A. Svarovsky et al.

Art Unit: Not Yet Assigned

Application No: 10/594,075

Examiner: Not Yet Assigned

Filed: September 22, 2006

Atty. Docket No: 31978-235608

For: CARBOHYDRATE-ENCAPSULATED  
QUANTUM DOTS FOR BIOLOGICAL  
IMAGING

Customer No:

**26694**  
PATENT TRADEMARK OFFICE

**FIRST SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT (IDS)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the documents listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the documents be made of record therein and appear on any patent to issue therefrom. Copies of documents **B1-B10** and **C1-C19** are enclosed.

This First Supplemental Information Disclosure Statement is filed within three months of the U.S. filing date (37 CFR 1.97(b)(1)).

In accordance with 37 CFR 1.9(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 CFR 1.98(a)(2).

In order to correct or add information to the citations presented in the Information Disclosure Statement previously filed on September 22, 2006, the following citations are

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /SH/

represented in this First Supplemental Information Disclosure Statement: Svarovsky et al., Carbohydrate Research, Vol. 338 (2003), pp. 1925-1935 (document C11); Faulkner, www.thenewsstar.com, Oct. 22, 2003, pp. 1-2 (document C18); and Chen, Nano Letters, Vol. 3, No. 5 (2003), pp.581-584 (document C19).

In accordance with 37 CFR 1.97(g), the filing of this First Supplemental Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. In accordance with 37 CFR 1.97(h), the filing of this First Supplemental Information Disclosure Statement shall not be construed to be an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

It is submitted that the First Supplemental Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed documents.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 22-0261, under Order No. 31978-235608. A Fee Transmittal is enclosed.

Dated: November 13, 2006

Respectfully submitted,

By 

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Registration No.: 46,722

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#796293



PTO/SB/08A/B (09-06)

Approved for use through 03/31/2007. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/594,075
				Filing Date	September 22, 2006
				First Named Inventor	Sergei A. Svarovsky
				Art Unit	Not Yet Assigned
				Examiner Name	Not Yet Assigned
Sheet	1	of	4	Attorney Docket Number	31978-235608

U.S. PATENT DOCUMENTS					
Exami ner Initials *	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	A1	6,114,038	09-05-2000	Castro et al	
	A2	6,194,213 B1	02-27-2001	Barbera-Guillem	
	A3	6,261,779 B1	07-17-2001	Barbera-Guillem et al	
	A4	6,444,143 B2	09-03-2002	Bawendi et al.	
	A5	6,544,732 B1	04-08-2003	Chee et al.	
	A6	2002/0150905 A1	10-17-2002	Barbera-Guillem et al.	
	A7	2003/0008414 A1	01-09-2003	Nie et al.	
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	A9	2003/0082237 A1	05-01-2003	Cha et al.	
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	A15	2004/0007169 A1	01-15-2004	Ohtsu et al.	
	A16	2004/0009911 A1	01-15-2004	Harris et al.	
	A17	2004/0014060 A1	01-22-2004	Hoheisel et al.	
	A18	2004/0023415 A1	02-05-2004	Sokolov et al.	
	A19	2004/0038307 A1	02-26-2004	Lee et al.	
	A20	2004/0180380 A1	09-16-2004	Lee et al.	
	A21	2004/0158051 A1	08-12-2004	Ozkan et al.	
	A22	6,596,555 B2	07-22-2003	Bensahel et al.	
	A23	6,326,144 B1	12-04-2001	Bawendi et al.	
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	A25	6,777,186 B2	08-17-2004	Mirkin et al.	
	A26	6,767,702 B2	07-27-2004	Mirkin et al.	
	A27	6,645,731 B2	11-11-2003	Terstappen et al.	
	A28	6,623,982 B1	09-23-2003	Liberti et al.	
	A29	6,620,627 B1	09-16-2003	Liberti et al.	
	A30	6,482,941 B1	11-19-2002	Khan Riaz et al.	
	A31	6,444,806 B1	09-03-2002	Veerapanani et al.	
	A32	6,365,362 B1	04-02-2002	Terstappen et al.	
	A33	6,120,856	09-19-2000	Liberti et al.	
	A34	5,866,099	02-02-1999	Owen et al.	
	A35	5,795,470	08-18-1998	Wang et al.	
	A36	5,698,271	12-16-1997	Liberti et al.	
	A37	5,567,326	10-22-1996	Ekenberg et al.	
	A38	5,541,072	07-30-1996	Wang et al.	
	A39	5,512,332	04-30-1996	Liberti et al.	
	A40	5,466,574	11-14-1995	Liberti et al.	
	A41	5,200,084	04-06-1993	Liberti et al.	
	A42	5,186,827	02-16-1993	Liberti et al.	
	A43	4,795,698	01-03-1989	Owen et al.	
	A44	6,772,070 B2	08-03-2004	Gilmanshin et al.	
	A45	6,774,361 B2	08-10-2004	Bawendi et al.	
	A46	6,710,366 B1	03-23-2004	Lee et al.	
Examiner Signature	/Shafiqul Haq/			Date Considered	11/16/2010

#795380v2

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /SH/

Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/594,075
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				First Named Inventor	Sergei A. Svarovsky
				Art Unit	Not Yet Assigned
				Examiner Name	Not Yet Assigned
Sheet	2	of	4	Attorney Docket Number	31978-235608

A47	6,790,455 B2	09-14-2004	Chu et al.	
A48	6,788,453 B2	09-07-2004	Banin et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
	B1	WO 2005/093422 A2	10-06-2005	U.S. Department of Health and Human Services		
	B2	WO 2005/093422 A3	10-06-2005	U.S. Department of Health and Human Services		
	B3	WO 2005/053649 A1	06-16-2005	U.S. Department of Health and Human Services		
	B4	WO 2004/039830 A2	05-13-2004	Regents of the University of California		
	B5	EP 0 810 853 B1	08-25-2004	Elan Pharma International Limited, Wood et al.		
	B6	PCT/US2005/009344 "Notification Concerning Transmittal of Copy of Int'l Prelim. Report on Patentability" and "Written Opinion of the ISA"	mailed 10-05-2006	U.S. Department of Health and Human Services		
	B7	WO 2006/093516 A2	09-08-2006	The Regents of the University of California		
	B8	International Search Report, date, issued in PCT/US2003/34897	mailed 08-20-2004	U.S. Department of Health and Human Services		
	B9	International Search Report and Written Opinion of the International Searching Authority, issued in PCT/US2005/009344	mailed 12-21-2005	U.S. Department of Health and Human Services		
	B10	International Preliminary Report on Patentability, date, issued in PCT/US2005/009344	mailed 10-05-2006	U.S. Department of Health and Human Services		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	/Shafiqui Haq/	Date Considered	11/16/2010
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/594,075
				Filing Date	September 22, 2006
				First Named Inventor	Sergei A. Svarovsky
				Art Unit	Not Yet Assigned
				Examiner Name	Not Yet Assigned
Sheet	3	of	4	Attorney Docket Number	31978-235608

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	C1	PALE-GROSDEMANGE et al., "Formation of Self-Assembled Monolayers by Chemisorption of Derivatives of Oligo(ethylene glycol) of Structure HS(CH <sub>2</sub> ) <sub>11</sub> (OCH <sub>2</sub> CH <sub>2</sub> ) <sub>m</sub> OH on Gold", J. Am. Chem. Soc., Vol. 113, 1991 (pp. 12-20)	
	C2	ALDANA et al., "Photochemical Instability of CdSe Nanocrystals Coated by Hydrophilic Thiols", J. Am. Chem. Soc., Vol. 123, 2001 (p. 8844-8850)	
	C3	BARRIENTOS et al., "Gold Glyconanoparticles: Synthetic Polyvalent Ligands Mimicking Glycolcalyx-Like Surfaces as Tools for Glycobiological Studies", Chem. Eur. J., Vol. 9, 2003, (p. 1909-1921)	
	C4	BARCHI et al., "Sugar-Coated Nanoparticles: Novel Scaffolds for the Study of Glycan and Glycopeptide-Mediated Processes", International Carbohydrates Symposium, Glasgow, Scotland, July 2004	
	C5	SVAROVSKY et al., "Development of multivalent gold and semiconductor nanoparticles encapsulated with tumor associated glycoantigens as antimetastatic and early cancer detection agents", American Chemical Society National Meeting, Anaheim, California, March 27-April 1, 2004	
	C6	LIANG et al., "Functionalized CdSe quantum dots as selective silver ion chemodosimeter", Analyst, 129(7), July 2004, pp. 619-622	
	C7	LIN et al., "Studies on quantum dots synthesized in aqueous solution for biological labeling via electrostatic interaction", Anal. Biochem., 319(2), pp. 239-243, August 15, 2003	
	C8	CHEN et al., "Luminescent CdS quantum dots as selective ion probes", published in Anal. Chem., 74(19), October 1, 2002, pp. 5132-8	
	C9	GAPONIK et al., "Thiol-Capping of CdTe Nanocrystals: An Alternative to Organometallic Synthetic Routes", J. Phys. Chem. B, Vol. 106, No. 29, 2002, (pp. 7177- 7185)	
	C10	ZHENG et al., "Ethylene Glycol Monolayer Protected Nanoparticles for Eliminating Nonspecific Binding with Biological Molecules", J. Am. Chem. Soc., Vol. 125, No. 26, 2003, (pp. 7790-7791)	
	C11	SVAROVSKY et al., "Highly efficient preparation of tumor antigen-containing glycopeptide building blocks from novel pentenyl glycosides", Carbohydrate Research, Vol. 338, 2003, (pp. 1925-1935) (published on the internet on 8/11/2003).	
	C12	BALLOU et al., "Noninvasive Imaging of Quantum Dots in Mice", Bioconjugate Chem., Vol. 15, No. 1, 2004 (pp. 79-86)	
	C13	CHAN et al., "Nanocrystal biolabels with releasable fluorophores for immunoassays", (In process; Abstract only), Anal. Chem., July 1, 2004, vol. 76, no. 13, pp. 3638-45.	
	C14	(SEARCH 1) Results of LEXIS search performed September, 2004. Search string = atleast10(quantum dot or quantum confin! or nanocrystal!) and atleast10(bio!) and (mercaptoalkanoic or mercaptoalk! or mercaptosuccinic or mercaptoformic or mercaptoacetic or mercaptopropionic or mercaptobutyric or mercaptovaleric or mercaptocaproic or mercaptocaprylic or mercapto*****oic or mercapto*****oic or thioalkanoic or thioalk! or thiosuccinic or thioformic or thioacetic or thiopropionic or thiobutyric or thiovaleric or thiocaproic or thiocaprylic or thio*****oic or thio*****oic)	
	C15	(SEARCH 2) Results of LEXIS search performed September, 2004. Search string = atleast5(quantum dot or quantum confin! or nanocrystal!) and atleast5(bio!) and atleast3(glycol)	
	C16	(SEARCH 3) Results of LEXIS search performed September, 2004. Search string = (quantum dot or quantum confin! or nanocrystal!) and bio! and (mercapto! or thio!)	
	C17	(SEARCH 4) Results of LEXIS search performed September, 2004. Search string = quantum	
Examiner Signature	/Shafiqul Haq/		Date Considered 11/16/2010

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Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/594,075
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				First Named Inventor	Sergei A. Svarovsky
				Art Unit	Not Yet Assigned
				Examiner Name	Not Yet Assigned
Sheet	4	of	4	Attorney Docket Number	31978-235608

		dot or quantum confin! or nanocrystal!) and bio! and glycol	
	C18	FAULKNER, "La. Tech Researches "Smart Tattoo" To Benefit Diabetics", www.thenewsstar.com, October 22, 2003 (pp. 1-2).	
	C19	CHEN, "Synthesis of Glyconanospheres Containing Luminescent CdSe-ZnS Quantum Dots", <i>Nano Letters</i> , Vol. 3, No. 5, 2003 (pp. 581-584).	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	/Shafiqul Haq/	Date Considered	11/16/2010
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PTO/SB/17 (07-06)

Approved for use through 01/31/2007. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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<b>FEE TRANSMITTAL</b> <b>For FY 2005</b>		<b>Complete if Known</b>	
		Application Number	10/594,075
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		Filing Date	September 22, 2006
		First Named Inventor	Sergei A. Svarovsky
		Examiner Name	Not Yet Assigned
TOTAL AMOUNT OF PAYMENT		(\$)	0.00
		Attorney Docket No.	31978-235608

<b>METHOD OF PAYMENT</b> (check all that apply)	
<input type="checkbox"/> Check	<input type="checkbox"/> Credit Card
<input type="checkbox"/> Money Order	<input type="checkbox"/> None
<input type="checkbox"/> Other (please identify): _____	
<input checked="" type="checkbox"/> Deposit Account	Deposit Account Number: 22-0261
Deposit Account Name: Venable LLP	
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)	
<input type="checkbox"/> Charge fee(s) indicated below	<input type="checkbox"/> Charge fee(s) indicated below, except for the filing fee
<input checked="" type="checkbox"/> Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17	<input checked="" type="checkbox"/> Credit any overpayments

<b>FEE CALCULATION</b>							
<b>1. BASIC FILING, SEARCH, AND EXAMINATION FEES</b>							
<b>Application Type</b>	<b>Fee (\$)</b>	<b>FILING FEES</b>	<b>SEARCH FEES</b>	<b>EXAMINATION FEES</b>	<b>Fees Paid (\$)</b>		
		<b>Small Entity Fee (\$)</b>	<b>Small Entity Fee (\$)</b>	<b>Small Entity Fee (\$)</b>			
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	
<b>2. EXCESS CLAIM FEES</b>							
<b>Fee Description</b>					<b>Fee (\$)</b>	<b>Small Entity Fee (\$)</b>	
Each claim over 20 (including Reissues)					50	25	
Each independent claim over 3 (including Reissues)					200	100	
Multiple dependent claims					360	180	
<b>Total Claims</b>		<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>	<b>Multiple Dependent Claims</b>		
- 20 =		x	=		<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>	
HP = highest number of total claims paid for, if greater than 20.							
<b>Indep. Claims</b>		<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>			
- 3 =		x	=				
HP = highest number of independent claims paid for, if greater than 3.							
<b>3. APPLICATION SIZE FEE</b>							
If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
<b>Total Sheets</b>	<b>Extra Sheets</b>	<b>Number of each additional 50 or fraction thereof</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>			
- 100 =	/50	(round up to a whole number) x	=				
<b>4. OTHER FEE(S)</b>							
Non-English Specification, \$130 fee (no small entity discount)					<b>Fees Paid (\$)</b>		
Other (e.g., late filing surcharge):							

<b>SUBMITTED BY</b>			
Signature		Registration No. (Attorney/Agent)	46,722
Name (Print/Type)	Lars H. Genieser	Telephone	(202) 344-4000
		Date	11/13/2006

#796305

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /SH/



PTO/SB/21 (09-06)

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/594,075
Filing Date	September 22, 2006
First Named Inventor	Sergei A. Svarovsky
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Examiner Name	Not Yet Assigned
Attorney Docket Number	31978-235608

**ENCLOSURES (Check all that apply)**

<input checked="" type="checkbox"/> <b>Fee Transmittal Form</b> <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> <b>First Supplemental Information Disclosure Statement</b> <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): <b>Form PTO/SB/08A and 29 cited documents</b>
<b>Remarks</b>		

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm Name	VENABLE LLP		
Signature			
Printed name	Lars H. Genieser		
Date	11/13/2006	Reg. No.	46,722

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